UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,342	12/13/2001	Robert Hundt	10019982-1	6805

7590   11/15/2004

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
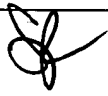Fort Collins, CO 80527-2400

EXAMINER
MITCHELL, JASON D

ART UNIT	PAPER NUMBER
2124	

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)	
Office Action Summary	10/017,342	HUNDT ET AL.	
	Examiner	Art Unit	
	Jason Mitchell	2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>13 December 2001</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-15</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-15</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>13 December 2001</u> is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   This action is in response to an application filed on 12/13/01.

2.   Claims 1-15 are pending in this case.

Drawings

3.   Figure 1 should be designated by a legend such as --Prior Art-- because only

that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in

compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid

abandonment of the application. The replacement sheet(s) should be labeled

"Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct

any portion of the drawing figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office

action. The objection to the drawings will not be held in abeyance.

4.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)

because they include the following reference character(s) not mentioned in the

description: Fig. 5, step 206 is omitted from the description on page 13, lines 36-37.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the

specification to add the reference character(s) in the description in compliance with 37

CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the

application. Any amended replacement drawing sheet should include all of the figures

appearing on the immediate prior version of the sheet, even if only one figure is being

amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the

page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing

figures. If the changes are not accepted by the examiner, the applicant will be notified

and informed of any required corrective action in the next Office action. The objection to

the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6.   Claims 1, 3-6, 8-11, 14 and 15 are rejected under 35 U.S.C. 102(a) as being

anticipated by US 6,189,141 B1 to Benitez et al. (Benitez).

Regarding Claims 1, 6 and 11: Benitez discloses reverting a process in an in-line

instrumented state to an uninstrumented state (col. 4, lines 21-22 'removes a hot trace')

by modifying selected text segment portions from said process (col. 29, lines 19-24 'a

target address of a translated instruction ... is replaced with the address of the

corresponding original instruction'); unmapping instrumented code space such that said

instrumented code space is inaccessible to said process (col. 27, lines 49-51 'changes

hot block storage management map so that ... coldest blocks are indicated to be

available'); provided an instruction pointer resides in said instrumented code space,

updating said instruction pointer to uninstrumented code space (col. 29, lines 19-24

'address of a translated instruction ... is replaced with the address of the corresponding

original instruction'); and executing said process and, provided said process generates

a fault by seeking to access an address in instrumented code space, providing a

corresponding address in said uninstrumented code space (col. 11, lines 28-38 'an error

condition has been detected ... control is returned to interrupter-preserver ... resuming

conventional execution').

Regarding Claims 3, 8 and 13: The rejections of claims 1, 6 and 11 are incorporated

respectively; further, Benitez discloses said instrumented code space is comprised of

shared memory (col. 10, lines 15-16 'instruments hot blocks and stores them in main

memory').

Regarding Claims 4, 9 and 14: The rejections of claims 1, 6 and 11 are incorporated

respectively; further, Benitez discloses unwinding a call stack of said process and

recording return addresses of said process (Fig. 6D).

The hot block-arc table shown in Fig. 6D is a record of jumps the execution has

followed. The value in column 222D represents the target address of each jump

instruction (col. 28, line 3 'column 222D ... the jump arc target'), and the value of

column 222B represents the jump instruction's address (col. 28, lines 22-27 'the

"starting hot block address" ... represented by column 212B'). The Backpatcher follows

a path retrieved from this table (col. 2, lines 1-3 'determination is made by examining

the fields for each record') in order to de-instrument any code that has 'gone cold' (col.

29, lines 21-24 'target address of a translated instruction ... is replaced with the address

... in original instruction storage').

Regarding Claims 5, 10 and 15: The rejections of claims 4, 9 and 14 are incorporated

respectively; further Benitez discloses comparing said return addresses of said process

to said address in said instrumented code space which generated said fault upon

execution of said process (col. 27, lines 63-67 'backpacker searches hot block-arc table

to determine if any ... block has a jump instruction that jumps to the block from which

translated instructions were translated').

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   **Claims 2, 7 and 12 are rejected under 35 U.S.C. 103(a) as being**

unpatentable over US 6,189,141 B1 to Benitez et al. (Benitez).

Regarding Claims 2, 7 and 12: The rejections of claims 1, 6 and 11 are incorporated

respectively; further, Benitez discloses said selected text segment portions are selected

from the group consisting of: branches, switch tables, procedure lookup tables (PLTs)

for said instrumented code space (col. 29, line 20 'backpatches a jump'). Please note

that branches, switch tables and PLT's are all considered jumps (col. 2, lines 62-65

'transferring control over an arc ... is referred to as a jump').

Benitez does not explicitly disclose the text segment portions being selected from a

group of breakpoints however he does disclose changing instructions that facilitate

debugging and monitoring (col. 34, lines 16-20 'such functions as debugging, …

monitoring')

It would have been obvious to a person of ordinary skill in the art at the time of the

invention to include text segment portions representing breakpoints in addition to the

jump instructions explicitly disclosed in Benitez (col. 29, line 20) because one of

ordinary skill in the art would want the ability to provide a more complete translation of

the code (col. 34, lines 11- 16 'may instrument, or other wise translate, instructions … in

addition to such instrumentation').

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. US 6,732,357 B1 to Berry et al., US 6,681,387 B1 to Hwu et al.,

and Malony, A. 'Event-Based Performance Perturbation: A Case Study' 1991 ACM.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jason Mitchell whose telephone number is (571) 272-

3728. The examiner can normally be reached on 7:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for

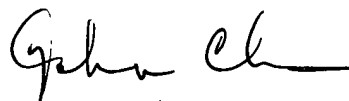the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Jason Mitchell
10/6/04

JOHN CHAVIS
PATENT EXAMINER
ART UNIT 2124